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The School Journal.

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TERMS.

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New York, May 17, 1884

This paper exists because there are important things concerning education that MUST BE SAID.

It is published THIS WEEK because there are things that must be said now.

THE coming Presidential election will present several interesting questions to the people. Both parties are pretty evenly balanced—the Republican, however, is in the majority. Among the questions to be discussed are: 1. Civil service reform in the National Government; 2. Civil Service reform in State and city governments; 3. Mormonism; 4. the Tariff. Besides these there are several minor questions. 1. What to do with the surplus in the Treasury; 2. Postal telegraphs; 3. the Indians; 4. the Railroads.

REPETITION is a part of truth-telling—a necessary part, and one that truth-tellers must not allow themselves to tire of, whether they be teachers, preachers, or artists. They must continue to present the old, familiar facts again and again, only studying to present them in a new way if possible, for truth is many-sided and the mind has many approaches; those through which some minds may be reached are in others closed. Truth must be turned around continually, until, like a gem, it flashes the light to many eyes.

THERE is coming slowly but surely upon us a condition of things that will demand higher moral wisdom as well as education. At that time man will need the help of woman, and it is an encouraging fact that woman is making ready to help. In all questions that bear upon the moral and intellectual well-being of society, woman should be permitted to give her decisions. It is quite as im-

portant to woman as to man whether whiskey-shops are to be permitted, and whether schools are to be encouraged. Let girls be taught what boys are taught; let them know what are the causes of misery, degradation and poverty; let them propose to help remove these causes.

THE New Education would not dispense with work as some seem to imagine; the object is not to make a plaything of the studies. On the contrary, work and effort are believed in as one of the prime factors in making a strong mind and character. It is believed that anything gained by honest, downright labor is doubly valuable because it is earned; and the mind that earns it is strengthened both by the effort and the consciousness of its own power. It is believed that the mind is adapted to work, constructed for it, made to progress by its own powers, just as a locomotive is, but with a similar limitation: it is intended to run *on the track*, not on the sleepers, and certainly not in a rut.

THE teacher will do well to remember throughout all his work, that by far the largest object with which he has to do is the pupil. The learner is of infinitely more importance than the learning. In the teacher's work the mountain must be brought to Mohammed—all the knowledge and all the cultivation must be brought to the pupil, and adapted to his nature; and this nature is the unit of measurement by which all other things are to be tried. This is, indeed, true of all work. The human soul is the largest factor with which men have to deal. It will never do to forget in the wild chase after knowledge and power, that man himself is the master, and these his unreclaimed possessions—mere waste lands except as he uses them.

I VENTURE the broad assertion that at twelve years of age, under a properly organized system of instruction, every American child of average capacity should be able to read, spell, speak, and write the English language correctly—a position which few attain at the age of eighteen years and many never. He should possess a good knowledge of numbers and accounts so far as may be necessary for the transaction of ordinary business. He should have acquired a reasonable familiarity with the geography and history of his country, and its form of government. He should have learned the elements of the sciences leading to agriculture and the mechanic arts, with something of their application. He should have so far mastered the art of drawing as to be able to represent any common object, utensil or machine with accuracy and facility. He should leave the school with a clear head, a willing heart and a ready hand. He should leave it with good habits, inspired with a love of study, and armed with the power and disposition to make life a perpetual school and labor an unceasing round of intelligent experiments, each adding its

daily increment to his stock of useful knowledge and its new joy to the pleasures of a rational existence.—WILLIAM F. PHELPS.

OFTEN a teacher lags at the work from sheer weariness of the flesh. Then he had better try the effect of a little more fresh air, a little more sleep; perhaps that is all that is needed to set him right. The teacher's work should be ever new to him. It should not become monotonous and tiresome,—and it will not become so if he seeks deep down for the principles that underlie the daily routine.

He should constantly remember that these pupils of his are live human beings, with motives, desires, hopes, and fears, like his own. He is dealing with human nature at first hand; it is his privilege to study the human mind, one of the most interesting studies in the world. If he realizes this, it is hardly possible that it can become tiresome to him. His work has foundations broader and deeper than the multiplication table, or any other table. Above and beyond all the routine, and repetition, the figures and pot-hooks, dates and statistics, is the great work of mind-training and heart-training. Moreover, the true teacher is an artist. He may grow weary at times of the desk and the studies, but if he holds before him the end of which these are only the means, he will find in the work itself a new pleasure with every day. The painter may tire of his pencil and pigments, but the picture is his inspiration; the musician sometimes hates the sight of his score and the great novelist his manuscript, but harmony and life never grow old to them.

The teacher's work comes nearer to the heart of nature than that of most other callings; for his study and his influence is not with abstractions but, personally, with humanity itself; and his reward is great in proportion; let him not grow weary in well-doing.

“THOSE ‘strong minded’ teachers who object to these modes of ‘making things pleasant,’ as an unworthy and undesirable ‘weakness,’ are ignorant that in this stage of the child-mind, the will—that is, the power of self-control—is weak, and that the primary object of education is to encourage and strengthen, not to repress, that power. Great mistakes are often made by parents and teachers, who, being ignorant of this fundamental fact of child-nature, treat as *wilfulness* what in reality is just the contrary of will-fullness; being the direct result of the *want* of volitional control over the automatic activity of the brain. To punish a child for the want of obedience which *it has not the power* to render, is to inflict an injury which may almost be said to be irreparable. For nothing tends so much to prevent the healthful development of moral sense, as the infliction of punishment which the child *feels to be unjust*; and nothing retards the acquirement of the power of directing the intellectual processes, so much as the emotional

the store to buy books with \$18. The books are worth \$3 a piece. He brings me six. I tell him to buy six books with \$18, and he pays \$3 for each book. In one case, he says 18 divided by 3 are 6; in the other, 18 divided by 6 are 3." Does he I think not. I think the child's language would be like this: "For every \$3 I can get a book; how many 3's have I?" He would then lay out the dollars in piles of threes, thus: 000 000 000 000 000, and say I can get six books, because there are six 3's in 18. But my time is up, and I have not said all I intended to say. I do not wish you to think that I am leading you to a conclusion fixed in my mind. I hope I am as a child seeking the truth. For the sake of the children, and before God, we have no right to reach conclusions, and then stop investigating, and say this is *right* and that is *wrong*. If it is right, it will stand, if not it must fall. Let us look at things as they are, and not be misled by language. I must say that the two conclusions reached with the same language for both has made a confusion in the minds of children that is terrible. This is my believe founded on my experience. I see Mr. Bright of the Douglas Schools, has just come in; perhaps he will speak to you of his experience.

Mr. Bright said in substance: "I am unfortunate in not hearing the discussion. But I'll tell you a little of my experience. In the 8th (highest) grade, I put on the board the expression, $4 \times 3 = ?$, and called on one of the highest pupils in the room to verify the example with objects. She took out four blocks, and then three blocks. She wanted to handle the 3 and the 4 in some way. She said: 'Here's the 4; I don't see how to get the 3.' She had not the slightest idea where the 3 came from."

Question.—"What difference does it make whether she knows or not, so she can work the example and get the answer?"

Mr. B. (excitedly).—"The difference in intelligence. Would you have our pupils become mere machines to grind out answers without knowing how they get those answers?"

Mr. P.—"Do you mean to say the girl was injured by not knowing every process for obtaining the answer?"

Mr. B. (emphatically).—"Of course she was, because she did not get it intelligently. My wife went into another room, the next day, and saw a little fellow working this example: $8-3=5$. She said: 'Now suppose you wish to show your little brother with these blocks what that means, how would you do it?' He took eight blocks and put them in one row, and put three blocks in another row. He took the three blocks from the eight blocks, and found eight blocks remaining, of course. This was in the 4th grade. He had not the least idea of the eight containing the 5 and the 3. Thus I have found it all through the building. With scarcely an exception have I found a pupil who has not been misled by the language of our arithmetics."

Question.—"How are we to find out what language to use?"

Mr. B.—"Go to the child, and you will find out always."

Mr. P., of the Oakland schools, says: "We have a language of arithmetic, firmly established and understood by adults; why not let the child use the idioms in common use until he reaches the age of maturity, when he will understand it?"

Mr. B.—"If the language is wrong it ought to be made right, so that the child will understand it from the first. I thank God that the child can understand its mother's language. She never deals in unintelligible terms. Put an example on the board like this: $\frac{1}{2}$ of $\frac{2}{3}$; what does the child do? He says '4 times 5 are 20,' and puts the 20 under a line thus, $\frac{1}{2}$; then he says '4 into 20 5 times,' and '5 times 3 are 15'; then he puts the 15 over the 20. Does he understand what he is doing? Of course not. I tested, the other day, a great number of children in fractions, and found only one child in each room who could tell intelligently why he did certain things. Their work was accurate, neat, and performed with remarkable quickness. But they were machines."

Mr. P.—"I would as soon have the man for a

bookkeeper who can find the correct result every time, as the one who could give the reason for every thing he did."

Mr. B.—"And I would not. The other day I was talking to a book-keeper who could explain everything he did, and who did his work all the better for understanding it. He was a very intelligent man and a respected citizen. Is it not a satisfaction to him not to be working in the dark?"

Another objector wishes to know whether too much time would not be required to explain all the reasons for doing everything to the child.

Mr. B.—"The children could find out every reason for themselves in the time flittered away on rules and definitions and processes."

Col. Parker rose and said: "All we want to do—the children, you and I—is to see things as they are."

After a little more talk and the transaction of some business, the institute adjourned. I have given this discussion in full because vital questions are concerned in it. I desire also to show that all is not smooth sailing for Col. Parker in Chicago, or any other place, for that matter. Such has never been the case with any reformer, and never will be. But it is hoped that good to the children may come from these discussions. I. W. FITCH.

THE NATIONAL ASSOCIATION.

The officers of the National Educational Association have issued a neat bulletin to give information to members. The meeting is to be held at Madison, Wis., July 15, 1894. Any person connected in any way with Education may become a member by signing the Constitution and paying \$2 to the treasurer. Those who wish entertainment at Madison will address J. H. Carpenter, Madison, Wis. Rates \$2.50 to \$10 at hotels; at private houses \$1. Tickets (round trip) good to August 31, will cost from Providence via Boston \$31; from Boston \$20; from N. Y. City (either of six trunk lines) \$30.50; Newark, N. J., \$30.50; Trenton, N. J., Newburg and Port Jervis, \$29.90; Albany and Troy, \$29.25; Philadelphia, or Wilmington, Del., \$28.30; Baltimore or Washington, \$27.40; Lancaster, Pa., \$27.58; Harrisburg, \$27.08; Williamsport, Pa., \$26.89; Binghamton, N. Y., \$25.85; Elmira or Corning, N. Y., \$24.60; Utica, N. Y., \$26.80; Syracuse, N. Y., \$25.50; Rochester, N. Y., \$23.50; Buffalo, or Niagara Falls, \$21.75; Wheeling, W. Va., \$19.25, and other places at corresponding rates. Six-fifths of the single fare to Madison will give you the round-trip fare; or if you purchase a ticket to Madison at full fare you will get a return ticket at one-fifth of that.

IGNORANCE as well as sin is the prolific mother of crime. Idleness and depravity travel hand in hand. Since the law has been in operation forcing children from the streets into the schools, the number of juvenile arrests for misdemeanors has lessened about one-half. The youthful mind must—like the miller's hopper—grind out something. Throw in books and instructions and it will grind on them with excellent results; leave it without such directing influences and it will grind on its own evil thoughts and purposes with fearfully injurious consequences; nay more, it will grind on the vile things which it sees and the profane things which it hears in the streets and low dens. The school-house and the church appropriately stand in many parishes side by side. They are the two agencies for the removal of human evils and the introduction of human happiness. God bless the teachers. They are the conservators of good morals as well as inspiring ideas in the nation.

AUSTRALIA.—There are nearly 100,000,000 sheep in Australia, or twice as many as in this country. The flocks are many of them very large, numbering from 50,000 up to 250,000, and in one instance 1,500,000. Within a short time, these great sheep-breeders have begun to learn the value of the American Merino for increasing the weight of the fleece. A considerable number of our choice sheep have been sent there.

EVERY child should bring at least one flower-pot to school and take care of it.

THE SCHOOL-ROOM.

For the SCHOOL JOURNAL.

LESSONS IN ELOCUTION.

As soon as pupils can read the sentences fluently, lessons in elocution should begin. It is a mistake to suppose that only young men and women can receive these lessons. The effort to teach a proper mode of utterance must be long continued, but it must be on a right system or injury will result. On a late visit to a primary school a class of forty-three stood up to read in the Second Reader. It was soon apparent that they had read "the piece" over until they knew it by heart. The teacher remarked: "The reading lesson is the most uninteresting of all; I wish I knew of some way to make it interesting." This is probably the wish of nine out of ten teachers, and it will so continue until the reading is something more than a mere utterance of the words, loud enough, slow enough, and with pauses at the commas.

The pupils must come to the reading lesson to be taught to utter ideas, or, rather, to express themselves expressively. I have a little book in which I have written down sentences and verses on which I train their voices. I give a line and they imitate me, first together, then singly. In this way an interest is created at the outset, for I speak to them and they to me; it is conversation, you see.

The class is before me, sitting; I stand—I begin: "John was a roguish little fellow."

Class.—"John was a roguish little fellow."

Teacher.—You do not smile enough; try again.

C.—Repeats, all in smiles.

T.—What kind of boy—large?

C.—No, ma'am; small.

T.—How do you know?

C.—He was a roguish little fellow.

T.—I see. Was he a dull, uninteresting boy?

C.—No, ma'am; he was roguish.

T.—Give me some other words for roguish.

C.—Playful, teasing, mischievous.

T.—Playful is the best. Give me the sentence again. (Repeated.) Now, James may try it. Pretty good; now, Mary. (A dozen try it.)

T.—Let us try another: "Oh, how it snows."

C.—"Oh, how it snows."

T.—You don't feel cold enough; try it again.

C.—Repeats it; and this sentence is handled very much as the other.

T.—Who remembers the piece we had two or three weeks ago—that pretty piece that Mary recited so sweetly?

C.—"What Birdie says."

T.—James, you may recite it.

J.—What does little birdie say

In her nest at peep of day?

"Let me fly," says little birdie,

"Mother, let me fly away."

Birdie, rest a little longer,

Till the little wings are stronger.

So she rests a little longer,

Then she flies away.

T.—That is a pretty piece. How many recited it at home? Why, nearly half the class have their hands up. Just remember that you can make a room full of people happy by saying a little piece just right. I want to hear that said again. Maggie may try it. (It is recited.) Don't forget that piece, please; I shall want to hear it a great many times. What was that queer sentence that I gave you the other day? Have you forgotten it? No, I see you have not. What is it, Mary?

Mary.—"John walked slowly down the path; suddenly he stopped, turned round and —."

T.—You did that very well; I am going to give you another. What was it John did? Never mind; it is all right as it is; I like that sudden stop; it sets us to thinking. The one I am to give you is supposed to be the speech of a poor little girl: "Please, please, sir, give a poor little girl a penny; please sir, please." Recite it. (It is recited.) Now, remember that, and try it at home until it sounds right, then we will try it to-morrow here. What is that piece that tells us about the morning—that which we gesture so much in?

C.—"This is the way the morning dawns."

T.—Yes; I want four to recite that as well as they know how. Esther, Sarah, Henry and Thomas, step up in front. Esther, begin.

Esther.—This is the way the morning dawns:

Rosy tints on flowers and trees,

Winds that wake the birds and bees,

Dewdrops on the fields and lawns—

This is the way the morning dawns.

Sarah.—This is the way the rain comes down,

Tinkle, tinkle, drop by drop,

Over roof and chimney top,

Boughs that bend and skies that frown—

This is the way the rain comes down.

Henry.—This is the way the river flows:

Here a whirl and there a dance,

Slowly now, then like a lance;

Swiftly to the sea it goes—

This is the way the river flows.

Thomas.—This is the way the birdie sings:

Little birdies in the nest,

You I surely love the best;

Over you I fold my wings—

This is the way the birdie sings.

Each child gestures as he deems best to give effect to the words. The teacher in every way encourages expression—by voice, look, gesture and movement—for such expression is elocution. Not only does the effort of the pupil press the thought into the hearer, but it makes the pupil comprehend it better. This is very important.

A class can be so wrought up by exercises like these that it seems to be an enchanted ground. It comprehends the meaning in words, and looks at words better.

At one exercise I brought in a box, and putting it on the desk, said, grasping my handkerchief: "Now, I have you at last. Ah! ha! I will thrust you into the lowermost dungeon of the grim castle and you shall torment me no more!" And although that has been said a hundred times, they are interested at its repetition. Each pupil has tried it.

These are but part of numerous exercises that may be used to exercise the expressive powers.

For the SCHOOL JOURNAL.

LESSONS IN PHYSICS.

Many, if not most, of the great basal facts in Physics can be exhibited to the children of the country school if the teacher will use a little ingenuity. Costly apparatus is unnecessary. In many cases the apparatus hides the fact. Make the fact plain, and in after-study the pupil will enjoy the exhibition of the fact by means of apparatus.

Let the teacher accumulate a few tools—screw-driver, iron plane, chisel, awls, wires, india-rubber tubing, glass tubes, pieces of glass, cups, saucers, a pair of scales, a spring balance, a dozen wide-mouthed bottles, marble, clay, iron, lead, etc.

The teacher takes a book in his hand, and says: "We notice that nature causes certain things to happen. We are led to think as to the cause. When we do something to see what nature will do in that case; this is called an experiment. About an hour ago I saw Henry's slate fall from his desk. That is a fact, is it not? Well, here is a book; I have been thinking, and wonder if this book will fall. You smile; the philosopher don't smile over such things and say 'of course it will.' He says 'experiment and I shall know.' How shall I experiment? I leave the book unsupported and it falls. How will it be with the chalk? John, you may try the experiment. Ah! it falls too. It breaks also. Well, lay the fact of breaking aside, we will look at that some other time. How about paper? If that is unsupported will it fall? Try the experiment. Yes, it falls.

"You ask 'Why do these fall?' You are asking the question Sir Isaac Newton asked, and which he would not let go out of his mind until it was settled. Most people are satisfied to say 'It is natural that it should fall.' This is no reason. If you go to a town and see a man taken to prison, you do not say 'It is natural.' You ask what is the reason they are pulling him along so closely guarded?

"First, let us see have we noticed any facts of this kind before we come to the class. Henry says he saw a man fall on the sidewalk. John, the board fell off the school-fence last night. Mary says she spilled some water on the floor, etc. Very well. What is the fact that is apparent in these ten or twelve fallings; try and state it. The earth pulls all bodies towards itself. Yes, it seems as if there was an invisible hand pulling them down, down all the time. There is a pretty German fairy story that says a young maiden was by the side of a brook, and that she took off her ring, and held it over the water, and that a man's hand suddenly reached out of the water and snatched it away. It seems as if some hand was pulling on this book I hold between my finger and thumb. (Illustrating.) See, he pulls it away from me.

"Now, this fact of the earth's drawing or pulling all bodies towards itself is a very wonderful thing. I will give you one fact, and let you get others for to-morrow. Do you see that post that holds up the ceiling of this room? Why is it there? You say to hold up the ceiling. But why is it needed? Henry states it, because the earth pulls so hard on the ceiling. I will give you one more. Here is a string; I tie it to this stone. Now I take hold of the string with one hand and the stone with the other; you see the string is horizontal. I let go of the stone, and the stone swings around in a curve. Why? The earth pulls it on this side and on that.

"Now, make experiments to illustrate the attraction of the earth, and tell us about them to-morrow."

For the SCHOOL JOURNAL.

DEVICES FOR PRIMARY WORK.

The following is one way of conducting a spelling lesson. The teacher says, "You may write on your slates the names of the things I make on the board." She then sketches rudely the outline of some object. At a signal pupils give the word and write it. If any do not know how, it is written on the board. A number of objects are sketched by the teacher and written by the pupils. Then the pupils are asked to tell something about these objects, and each good sentence given is written. For a more advanced class, the teacher may sketch a number of objects that may be connected and a story told about them: As a boy, a house, a table, a trap, a mouse, a cat. Two or three minutes are given the pupils to think of a story that shall be about all these things. Then the stories may be given orally or written, and some of the best ones read aloud.

It is not necessary for the teacher to be a drawing-master in order to do this. The drawing may be very rude, the vivid imagination of the children will see what is meant. By choosing simple objects and practicing upon them a few times any teacher can do this.

Word-Developing may be made a very interesting exercise. In looking over the advance lesson in the first reader the teacher finds five new words: boat, oars, rowed, float, upset. The lesson, which is about a boy in a boat, must be kept fresh until they are ready to read it. The teacher goes to the board, all have slates and pencils ready to write. The teacher says: "Once I stood on the bank of a small river; I saw a friend on the other side, and I called to him to come where I was, for I wished to see him. In a few minutes he came. How do you think he crossed the river?" Some may say "On a bridge;" some, "Swam across;" some will say "In a boat." "He came in a boat. I will write 'boat' on the board, and you may write it on your slates. What is the word? Boat. Well, how did the boat get across?" Perhaps some will say, "Rowed." Ask them to say all they mean—to give a complete sentence. "My friend rowed it." "How many ever saw one row a boat? How is it done?" Let some one describe the action and the oars. Draw a picture of an oar on the board, and if possible the boat with oars at the side. Write both "oars" and "rowed;" have them pronounced and written by the class. "Sometimes the one who is

rowing the boat will lift his oars out of the water and let the boat go as it chooses. What do we say the boat does then?" If no one thinks of "floats," ask what a stick does if thrown in the water?—what the cork on a fish-line is called? Write "floats." Then ask what happens sometimes when people go out in boats. "Upset" will be suggested. Have all the words upon the board pronounced by several members of the class. If there are more new words in a lesson than the pupils can well master at once, develop a few of them in this way, then ask the class to give a sentence about each word, using each word in turn. Write the best sentence of each word on the board, and use these for a reading lesson. At next recitation review the list of words, and have the class make up a story using the words. Let all work at it until it is in good shape, then write and have it read. Treat the remaining new words of the lesson, or any that are not perfectly familiar to all the class, in a similar way. When the lesson in the book is taken up there will be no stumbling over difficult words.

Singing can be made very attractive, and when a part of the morning exercises, offers one good means of preventing tardiness. "I ran all the way to school so as not to miss the singing," said a little girl once. Bright, lively songs are enjoyed most. The teacher should have a song scrap book in which to collect these. The words may be quickly taught by writing a verse or two on the board for a reading and writing lesson, first developing the unfamiliar words. The airs will be quickly caught. When the teacher cannot sing, a larger pupil may sometimes be found to lead the singing, or a young lady in the district who has plenty of time can be induced to come in occasionally and give the children a treat.

For the SCHOOL JOURNAL.

LESSON ON THE TEETH.

Show the children some teeth, also pieces of bone and lime. A few days before giving the lesson put an ounce of muriatic acid and a pint of soft water in a bottle. Call attention to a bone, a fresh chicken-bone is preferable; put the bone in the bottle, and let it stand. Burn another piece of bone until the gelatinous substance is driven off. In beginning the lesson ask how the teeth differ in substance from other parts of the body. What part of the body they resemble? Show a tooth and a piece of bone. Let one tooth be cracked open, so that the interior may be seen. Let them point out the part of the tooth that resembles bone. How does it differ from the outside covering of the tooth? Notice how easily this is cracked. "This is called the enamel. Why are teeth covered with enamel? What happens when it wears off or is broken." Show the interior of the tooth. "This is where the nerves are. What happens when the bone wears down to the nerves? What causes the enamel to crack? Should teeth be used for nut-crackers?" Show the bone that was put in acid, and how it is easily bent or twisted. Show the one that was put in the oven. It cannot be bent, but may be easily broken. "Here are the two substances that compose bone—the brittle part is lime and phosphorus, the elastic part is a kind of gelatine. What would happen if the gelatine were driven out of the bones in our body? What if the lime and phosphate were taken out? What did I use to take the lime out of the bone? Acid dissolves lime. The substance that gathers on the teeth when they are not cleaned contains acid. It destroys the enamel by taking the lime out of it, and so causes the teeth to decay. Then what must we do if we would preserve our teeth? How shall we keep them clean? What harm to scour them with tooth powders? Very hot or very cold water will crack the enamel. Water slightly warm is best. Hot food injures the enamel. How can teeth be saved after they have begun to decay? We should not neglect to have them filled as soon as a cavity appears. When teeth come in crooked they should be straightened, as they usually decay soon if this is not done.

For the SCHOOL JOURNAL.

LESSONS IN FRACTIONS.

W. W. SPEER.

The difficulty in teaching fractions arises from the teacher's effort to make impressions through the symbols of fractions instead of the fractions themselves. The following hints as to the method of making clear the relation of fractions that meet in sixths may be of aid to some teachers who are not satisfied with their present efforts in this direction.

Request pupils to draw a square and mark it off into six equal parts, or let them fold a paper in such a way as to show by the creases, after it is unfolded, its division into six equal parts. Direct the attention of the pupils to the drawing or creased paper. In answer to the question, What do you see in the square? The following answers may be drawn:

I see that the square is separated into 6 equal parts. I see 1 of the six equal parts, 2, 3, 4, 5 and 6 of the six equal parts. I also see that 2 of the six equal parts are equal to 1 of the three equal parts, or $\frac{1}{3}$; that 4 of the six equal parts are equal to 2 of the three equal parts, or $\frac{2}{3}$; that 3 of the six equal parts are equal to 1 of the two equal parts, or $\frac{1}{2}$. I also see that in $\frac{1}{2}$ there are 1 of the three equal parts and 1 of the six equal parts, or $\frac{1}{2}$ and $\frac{1}{6}$; that in $\frac{1}{3}$ there are 1 of the two equal parts and 1 of the six equal parts, or $\frac{1}{3}$ and $\frac{1}{6}$.

If I ask a pupil who is observing the square, for the sum of $\frac{1}{2}$ and $\frac{1}{3}$, he will have no difficulty in seeing that $\frac{1}{2}$ and $\frac{1}{3}$ are equal to 5 of the six equal parts, or $\frac{5}{6}$; that the difference between $\frac{1}{2}$ and $\frac{1}{3}$ is equal to 1 of the six equal parts, or $\frac{1}{6}$; that in $\frac{1}{2}$ there are 1 $\frac{1}{3}$'s; that $\frac{1}{3}$ of $\frac{1}{2}$ is $\frac{1}{6}$. In performing these operations, he has changed the fractions to a common denominator without being conscious of it, and at the same time sees the reason for it, i. e., that he cannot combine or separate them unless he does change them to sixths. I think this is a good method of discovering the relation of fractions, for it substitutes for the dogmatic statement of teacher or text-book the discovery of the truth by the learner.

Many comparisons of fractions seen in the square can be made. To illustrate, I will compare $\frac{1}{2}$ with $\frac{1}{3}$. First by addition and subtraction, then by the two forms of division:

- (1.) $\frac{1}{2}$ and $\frac{1}{3} = \frac{5}{6}$
- (2.) $\frac{1}{2}$ less $\frac{1}{3} = \frac{1}{6}$
- (3.) In $\frac{1}{2}$ there are one $\frac{1}{3}$, and $\frac{1}{6}$ remaining, or in $\frac{1}{2}$ is found 1 $\frac{1}{3}$ times.
- 4th. $\frac{1}{3}$ of $\frac{1}{2} = \frac{1}{6}$.

In addition to the above objective work in teaching fractions, the pupils' attention should be turned to the impressions made upon their minds by the objects, and with closed eyes they should state what they see.

Drill to secure rapid combination and separation should constitute a part of each exercise. If properly trained the pupil can see instantly that $\frac{1}{2}$ and $\frac{1}{3}$ are $\frac{5}{6}$. He can see the result as easily as he can see that 3 and 2 are 5. The operations are exactly the same, the difference is a difference in language.

A fundamental mistake in teaching fractions is to try to teach with a part of the whole instead of with the whole. In order to see the relation of an equal part to the whole, the whole must be presented. If teachers or text-books have to give directions for reducing fractions to a common denominator, or to their lowest terms, it shows that the fractions have not been seen in their relation to the wholes.

In addition to the work suggested above, the pupils should be required to make applied problems involving the fractions seen in the objects separated.

Examples: If a book cost \$3 and a slate cost \$1, what do they both cost? What is the difference in the cost of the book and the slate? At \$1 apiece how many melons can I buy for \$3? If a peck of walnuts cost \$1 what will $\frac{1}{2}$ of a peck cost?

Another illustration is a parallelogram separated into 12 equal parts.

Into how many equal parts is the figure separated?

State all that you can see in the figure.

Observe the figure and tell to what sum of $\frac{1}{2}$ and $\frac{1}{3}$ is equal. What is the difference? In $\frac{1}{2}$ how often do you find $\frac{1}{3}$? What is $\frac{1}{3}$ of $\frac{1}{2}$? What is $\frac{1}{2}$ of $\frac{1}{3}$?

Compare fractions seen in the figure with each other. Illustration—Comparison of $\frac{1}{2}$ with $\frac{1}{3}$; $\frac{1}{2}$ and $\frac{1}{3} = \frac{5}{6}$; $\frac{1}{2}$ less $\frac{1}{3} = \frac{1}{6}$. In $\frac{1}{2}$ there are 1 and $\frac{1}{3}$'s, or in $\frac{1}{2}$ is contained 1 $\frac{1}{3}$ times. $\frac{1}{3}$ of $\frac{1}{2} = \frac{1}{6}$. $\frac{1}{2}$ of $\frac{1}{3} = \frac{1}{6}$. Compare $\frac{1}{2}$ with $\frac{1}{3}$; $\frac{1}{3}$ with $\frac{1}{2}$; $\frac{1}{2}$ with $\frac{1}{6}$.

Make applied problems involving the fractions seen in the figure.

Combine and separate the fractions as rapidly as possible. It would be a mistake to confine the objective teaching of fractions to the observation of creased papers and separated parallelograms. A great variety of objects should be used and the work continued until the pupils acquire power to see at once the relations without associating the equal parts with any particular object. Poor objective teaching may hamper the action of the mind as effectually as mere word teaching.

For the SCHOOL JOURNAL.

READING FOR SCHOOL CHILDREN.

It is quite apparent that the teacher should use the ability to read like a powerful lever; it is, indeed, a skillfully-constructed machine, with which great effects may be produced, and not an end in itself. Instead, therefore, of simply teaching Reading, the teacher should direct the Reading. A very successful teacher in New York City procured a library at his own expense for his primary pupils; in after years each pupil presented the library with a volume on leaving. His pupils read enormously, and yet in a systematic way. This plan is now seen to be the true one; the pupil having acquired the power to read will gratify it; he must be taught how to expend this new-found power in a proper way.

1. What shall guide the pupil's reading?
 2. What books shall the pupil read?
- The pupil is not able to select his own reading; the teacher should select appropriate reading for him. For young children, illustrated books portray the doings and sayings of sensible young boys and girls, and describe animals, insects, birds and fishes, and are always interesting and profitable. The book must never be below the child, but rather something that deals with an experience and thought he has had. The teacher should read every book that the pupil is to read. He should be told about the authors and should learn to reverence them. He should learn to respect a book and ever to treat it with care. He should learn something from the various authors; for instance, when Walter Scott is mentioned a pupil should have a few lines to quote, and so from Shakespeare and other authors.

One of the best aids to reading is the making of scrap-books. Beside me are several scrap-books made by two young girls; some are filled with choice poetry, others are biographical; some have very neat pictures; the selections are usually from the best writers, and the names of authors are given. This can be pursued at school with many advantages.

A library simply and solely for children should be in every school-room. When a boy, the writer borrowed "Hope On, Hope Ever" from a friend and put it in his pocket. The lessons having been recited, he took it out, and holding it under the desk, proceeded to peruse it, but the sharp eye of the teacher discovered the immovable body, and stealing along, snatched the volume away. The guilty pupil was ordered out on the floor, and threatened with a severe whipping; but this was modified into a detention of the volume for two weeks. This was considered a shrewd act; but times change. Every pupil should find time to read some good book in school and be encouraged thereto. The teacher should stimulate and help the reading of the right sort of books. Why? Because such reading educates.

Such a library should be considered a means to education. The teacher should know what books his pupils are reading; he should select for them. For example, if they are reading American history, they will need the lives of Franklin, Grant, Lincoln, etc. If they are studying Arctic geography, they should read Sargent's "Arctic Adventures," Kane's "Arctic Explorations," Hall's "Arctic Researches," etc.

What books shall constitute the school library? It is pretty clear that the volumes should be selected to cover a wide field; the general departments will be Home and School Life, Travel and Adventure, Legends and Fairy Tales, History and Biography, Poetry, Science, Novels and Tales, Arts and Manufactures, Health, Strength, and Outdoor Sports, Home Arts and Amusements, and Reference Books. The list from which books can be chosen is very large; one containing only about 100 volumes will be given here.

Home and School Life—Rollo Books, 14 vols., each \$1.00.

Travel and Adventure—"Robinson Crusoe," "Cast up by the Sea," \$1.25; "Swiss Family Robinson," "Paul du Chailu," 2 vols., each \$1.50; "Boy Travellers," 3 vols., each \$3.00; "Zig-Zag Journeys," 3 vols., each \$1.50; Jules Verne, 2 vols., each \$1.50.

Legends and Fairy Tales—"Arabian Nights," Grimm's Fairy Tales, Hawthorne, 2 vols., each \$1.25; "Alice in Wonderland," \$1.50.

History and Biography—Abbott's Biographies, 8 vols., each \$1; Towle's do., 3 vols., each \$1.25; "Young Folks' History of the U. S.," \$1.50; Hawthorne's "Twice Told Tales," 2 vols., each \$1; Charles C. Clifford's "Boys of '76," \$3; J. S. C. Abbott's Biographies, 6 vols., each \$1.25; "Scottish Chiefs," "Knight's History of England," 4 vols., each \$2; "Story of Liberty," \$3; "Child's History of Greece," 2 vols., each \$1.25; do. Rome, 2 vols., each \$1.25; do. U. S., 4 vols., each \$1.25.

Novels and Tales—Dickens, 4 vols., each \$1.50; Walter Scott, 4 vols., each \$1; Miss Yonge, 4 vols., \$1.50 each; Cooper, 4 vols., each \$1; "Uncle Tom's Cabin," F. Marryat, 2 vols., each \$1.25; Mayne Reid, 2 vols., each \$1.50; Irving, 4 vols., Elijah Kellogg, 2 vols., each \$1.25; Louisa M. Alcott, 4 vols., each \$1.50; "Paul and Virginia."

Poetry—Bryant's "Family Library of Poetry and Song," \$3.50; Longfellow. Shakespeare.

Science—"Insect World," \$1.50; "First Book of Zoology," \$1.25.

Reference Books—"Chamber's Book of Days," \$8; "Chamber's Cyclopaedia."

These volumes will cost quite a large sum of money, but they should not all be purchased at once. Let the teacher plan to purchase ten volumes this year and take care of them. Let them be well read and discussed. Next year she will try to purchase ten volumes more. Let the books be kept in the school-house, and not carried away or loaned; if loaned to the pupils, they should be brought back daily,—the object being not to furnish general reading for the public, but for the scholars. They should all be in the library each day for consultation—this is very important. There should be a good book-case, with a lock, and the teacher should lock up the books, and see that they are kept in order.

By a plan of this kind the children will be made acquainted with the rich treasures of English Literature.

TEACH the children to use their powers of observation. Most people miss half that is in this world, because they have never been taught to look. Many have wondered at the names which Mr. Dickens introduce into his story. They seem so wonderfully well fitted to his characters. Many suppose that they were invented by the author, and that they had no existence in real life. This was not so. As Mr. Dickens walked through the streets of London he was accustomed to notice the signs upon the stores and shops. Whenever he noticed one that was peculiar, he put it down in a book. Teach your pupils to gain knowledge from all things about them. Help them to make the heavens and earth teachers.—A. D. MAYO.

FOR THE SCHOLARS.

A SCHOLAR.

FOR RECITATION.

"Yes, I am five years old to-day!
Last week I put my dolls away;
For it was time, I'm sure you'll say,
For one so old to go
To school, and learn to read and spell;—
And I am doing very well;—
Perhaps you'd like to hear me tell
How many things I know.
"Well, if you'll only take a look—
Yes, this is it—the last I took,
Here in my pretty picture-book,
Just near the purple cover;—
Now listen—Here are one, two, three
Wee little letters, don't you see?
Their names are D and O and G;
They spell—now guess!—*Old Rover!*

—St. Nicholas.

THE BAREFOOT BOY THAT DRIVES THE CATTLE HOME.

FOR RECITATION.

'Tis evening, and the round, red sun sinks slowly in the west;
The flowers fold their petals up, the birds fly to the nest;
The crickets chirrup in the grass, the bats wheel to and fro,
And tinkle-tinkle up the lane the lowing cattle go,
And the rich man from his carriage looks out on them
As they come—
On them, and on the barefoot boy that drives the cattle home.
"I wish," the boy said to himself, "I was that millionaire,
I'd have a palace for my home and never know a care;
There is no wish that heart could frame I would not gratify,
There would not be in all the land a happier man than I!
What joy 'twould be to lead a life where cares would never come,
And be no more the barefoot boy that drives the cattle home."
And the rich man sighs unto himself: "My wealth I'd gladly give
Could I live another life than that which I now live—
Could I leave behind the dust, and glare, and tumult of the town,
And sleep at night without a care if stocks went up or down.
O, I'd give my palace and my yacht that sails the ocean foam,
To be once more the barefoot boy that drives the cattle home."

For the SCHOOL JOURNAL.

A CAPITAL.

FOR DECLAMATION.

A man must have a capital before he can start in any business, if it is nothing more than keeping a peanut stand. The capital need not always be money; it may be brains, a sound education, a trade or profession, or it may be nothing but a stock of energy for any kind of honest labor. Either of these are good capitals. The world wants young men who know how to do something, and can do it well. There is always a demand for good lawyers, good physicians, teachers, butchers, bakers, or candlestick makers; but there is none for the lazy young man who only knows how to part his hair in the middle or dance the latest waltz step, whose stock of information extends only to the latest style in tailoring, or the latest race or prize fight. These are the young men that are always complaining of the world, who find nothing in life worth living for. They are dissatisfied with everything and everybody, themselves included, and it is no wonder. They have nothing to be satisfied with; they are bankrupt young men; they have no capital.

In a dining-room 'n Pompeii are three paintings representing people at dinner. The men in togas, reclining on couches, are being served with the choicest of viands and wines. In the central picture a lady is drinking from the long cornucopia-shaped vessel called the "Rhiton," while one of the Roman gentlemen is represented as making her the "toast" of the evening; over his head is written in Italian the words of his supposed utterance, "Here's to the handsome girl from Herculaneum!"

NEWS OF THE WEEK.

May 6.—The Siamese Embassy was received at the White House.—The firm of Grant (U. S. Grant and Sons) & Ward, brokers, failed causing the Marine National Bank to suspend payment.
May 7.—Twenty-four persons saved from the State of Florida were landed at Quebec.—The American Medical and American Forestry Associations met in Washington.
May 8.—Articles of incorporation for street railroads in Broadway and Fifth Avenue were filed at Albany.
May 9.—An uprising in South Africa is reported.—Broadway property owners oppose the Railroad bill on the ground of danger to property.
May 10.—The English are making preparations to send a relief expedition to Khartoum in July.
May 11.—Efforts are being made to send messengers to Gen. Gordon.—The Mississippi levee was broken near Baton Rouge.
May 12.—A resolution censuring the Egyptian policy of Mr. Gladstone was debated in the House of Commons.

WHAT CONGRESS IS DOING.

The Senate further considered the Shipping bill, passed a bill providing for a bridge across the Potomac, insisted upon its amendments to the Fitz-John Porter bill and Pleuro-pneumonia bill, in which the House had failed to agree; discussed the Indian Appropriation bill. The House, after an exciting debate, voted against the Tariff bill prepared by Mr. Morrison. It failed to concur in the Senate amendments to the Fitz-John Porter bill, and amended and passed the Senate bill appropriating \$1,000,000 for the New Orleans Exhibition.

GOLDEN THOUGHTS.

[These can be used by the live teacher after morning exercise, or they can be written out and distributed among the class, or one may be written on the black-board each day.]

"IMPOSSIBLE!" it is not good French.—NAPOLEON.

LET all the ends thou aim'st at be thy country's thy God's, and truth's.—SHAKESPEARE.

HE who waits to do a great deal of good at once, will never do any good.—DR. JOHNSON.

WE are shaped and fashioned by what we love.—GOETHE.

CONSCIENCE is the voice of the soul; the passions are the voice of the body.

IT is better to wear a poor vest with a royal heart behind it than to wear a royal vest with a beggar's heart inside.

NO man can be brave who considers pain the greatest evil of life; nor temperate who considers pleasure to be the highest good.

IF you would relish your food, labor for it; if you would enjoy your raiment, pay for it before you wear it; if you would sleep soundly, take a clear conscience to bed with you.

THEY are slaves who fear to speak
For the fallen and the weak.

LIFE is a leaf of paper white,
Whereon each one of us may write
His word or two, and then comes night.
Greatly begin! Though thou have time
But for a line, be that sublime,—
Not failure, but low aim, is crime.
—*For an Autograph.*

WORK for some good, be it ever so slowly;
Cherish some aim, be it ever so lowly;
Labor—if honest—is noble and holy.

INTERESTING FACTS.

THE railroad up Pike's Peak is nearly completed and will be ready for business by the first of June. The distance from Manitou to the top of the Peak is only twelve miles by rail, but the railroad will cover about thirty-five miles.

IN Philadelphia a pipe line 1,000 feet long is used to conduct molasses from the "smear-house" to the wharf, saving the expense of cartage. It is heated by steam so as to run easily.

IN boring for water near Dayton, O., recently, a stratum of frozen earth was encountered at a depth of fifty-five feet. Passing through this for five feet, numerous cavities were found, from which cold air came in gusts. The escaping air of the bottom of the well can be heard roaring at some distance. It is not possible for any one to hold his hand over the well for any length of time without freezing it, and a bucket of water let down into the well was frozen over in a few minutes.

DR. BJÖRNSTROM, superintendent of a lunatic asylum at Stockholm, introduced a printing press and some type into the establishment for the benefit of an insane compositor. The other patients became interested in printing, and the Doctor soon gave them a more extensive apparatus. The result is the recent publication of the

Doctor's book on "Diseases of the Mind," which was set up, printed, and bound by the patients, and is pronounced a very good piece of work in every respect.

CRUELTY IN CHILDREN.—A child who takes pleasure in the suffering of any creature has a serious defect in his nature. A life of cruelty and misery is before him unless he can be set right. The teacher should never allow such a fault to go unchecked. A kindly talk showing the similarity of the animal's sensibilities to our own may be sufficient. If not he should be led to take an interest in its life. He should be told about its habits, shown its few sources of pleasure, led to contribute to its pleasure, to feed it, to leave some wool or a string for the bird that is building her nest in the spring, or the squirrel that is preparing his winter quarters in the fall. When he learns to take pleasure in their pleasure he will not care to give them pain.

TRAIN DELAYED BY ANTELOPES.—The west-bound train between Green River and Granger on the Union Pacific, recently encountered a flock of 1,200 or 1,500 antelopes. The snow was quite deep and drifted in places, and the antelopes were running on the road bed, finding that the easiest road to travel in. When they were first encountered many of them were killed, and the engineer, seeing that the train might be delayed, decreased the speed. The antelopes kept a short distance ahead of the engine, and were strung along the road for a quarter of a mile. They would occasionally get some distance from the engine and then they would stop, turn around and watch the headlight until the engine was fairly upon them.

WANT OF SLEEP.—Dr. William Hammond says: "With every thought that flashes from the brain, with every act of volition that is performed, with every emotion that is felt, with every perception that reaches it through any one of the special senses, a certain amount of the brain's substance is decomposed and passes out of the system by the kidneys, mainly in the form of phosphates." And so the phosphates are the ashes of the brain, and by determining their quantity we arrive at a sufficiently exact idea of the extent of brain-work which an individual has accomplished in a given time. The secretion from the kidneys given off by clergymen on Monday morning, always, in consequence of the extra work on Sunday, contains a large excess of phosphates. That of lawyers, after long speeches, exhibits a like condition, and the same is true of literary and other people who use their brains to excess. Now all this waste, whether of thought, feeling, volition, or perception, must be compensated for, and this is provided by new material derived from food sent through the blood to the waste places;—but for this the brain would cease to act, and the engine would stop. But this work of recuperation is mainly performed during sleep, and so thoroughly that in the morning when the man awakens his blood is purer, and after a slight meal he is at his strongest and best. How important an agency then Nature's sweet restorer becomes, and how necessary it becomes that sleep should have supreme sway for the needed eight hours. The individual who goes to bed, and who not only cannot sleep, but whose brain is busied with trains of thought, is burning his candle at both ends. He is consuming his capital both night and day, and unless the conditions be relieved, serious disease is the consequence. The brain is strong; it will stand an enormous amount of ill usage before it gives way, but there are limits beyond which it cannot go with safety.

GERMANY.—The Prussian Ministers of Public Works and of Worship have issued a joint decree concerning the windows in the class-rooms of public schools. It requires that the windows shall be of sufficient size and height, and shall be on the left of the pupils. If additional light is needed it shall come from windows in the rear, and never in front or at the right side.—The teachers' association at Frankfurt-on-the-Main has directed its committee on literature for the young to make a list of good, sound books suited to young people. This is embodied in a little work which is published by the above association called "Counsellor to parents, teachers and librarians in the selection of books for children and young people." The association does not confine itself to indicating books which are to be recommended, but points out works of an opposite character as well. The catalogue is divided into three parts. The first contains books suited to children of ten years of age, the second books for children from ten to fourteen years old, and the third, books suited for children above that age. The last two divisions give the general contents of the books, also a classification of subjects. The criteria kept in mind by the commission are moral purity, appropriateness of the matter and style to the different ages of the children, simplicity, clearness, and attractiveness of statement, and freedom from attack on the opinions of others.

EDUCATIONAL NOTES.

ELSEWHERE.

ROCHESTER, N. Y.—A training class for teachers has been successfully established.

ERRATA.—The note headed St. LAWRENCE Co., N. Y. in May 3rd JOURNAL, should have been headed LEWIS Co., N. Y.

COLLEGES.—Amherst and Dartmouth are to have daily papers. Harvard, Yale, and Cornell are the only institutions at which dailies have succeeded so far.

MICH.—A State school for feeble-minded children will probably be located at Kalamazoo. Dr. C. T. Wilbur, late superintendent of a similar institution at Lincoln, Ill., has bought a 20-acre farm just outside the city for this purpose.

IOWA.—The citizens of Timber Creek, Marshall Co., voted unanimously to tax themselves for an addition to the school library, equivalent to its former value, about \$25. How many country districts are so generous?

MONROE Co.—The bi-monthly session of the Teachers' Association was held at Pittsford, April 26. Class exercises in mathematics, grammar, language, and geography were given. Profs. Downing, McMahon, and A. M. Brown were elected delegates to the State Association at Elmira.

LOUISIANA.—Mr. Paul Tulane's most recent gift to Tulane University, New Orleans, is stocks and bonds of a face value of \$296,000, but whose market value is much greater. They will yield an income of \$19,600 a year. His total gifts to Louisiana are worth more than \$1,000,000.

INDIANA.—The teachers of Posey County have met at Poseyville for a nine weeks' normal institute. The institute is under the supervision of our county superintendent, James Kilroy, assisted by Mr. D. Driscoll. Mr. Kilroy has the success of the schools of his county at heart. He has brought the educational standard of Posey County up to any in the State.

PENN.—Dr. Brooks, who for seventeen years was principal of the State Normal School at Millersville, Pa., has been elected President of the National School of Oratory. Dr. Brooks' broad experience as a teacher and organizer, his popularity as a lecturer before educational associations, and his influence as a writer upon metaphysical subjects admirably fit him for this position.

JAMAICA, N. Y.—An unused class-room in the Jamaica school-house has been fitted up by Principal Ballard at his own expense for a gymnasium, and is used by classes from the school and the young people of the village. Mr. Ballard gives the instruction himself. The good results of the plan are apparent in the improved health of the scholars and the ease and grace of all their movements. Commissioner Surdam reports that in his district 105 teachers read 115 school periodicals. "And still," says he, "there is room for more."

N. Y. STATE.—The Warren County Teachers' Association will meet at Lucerne, Friday evening, May 16, 1884. There will be papers, discussions, readings, music, etc. The question of adopting a course of professional study for the members of the Association to pursue and discuss at its meetings will be submitted. Delegates to the State Teachers' Association are to be chosen. It is hoped that there will be a large attendance. All interested in the cause of education, whether teachers or not, are invited to be present.

CHEMUNG Co.—The teachers of Elmira have organized a movement for mutual improvement, by appointing a committee, one for the academy and one for each grammar school, with Supt. Tompkins as chairman. The committee are to map out a line of study in anatomy and physiology upon which the teachers prepare themselves topically. Once a month a lecture upon the topics of the month will be given by some physician who has made the topic a specialty. This, besides two meetings each year of the Elmira Educational Society and County Association, shows that the teachers of Chemung Co. believe in progress.

NORMAL PARK.—The following program of the First and Second Primary Grades in the public schools may furnish a suggestion to some teacher.

9 to 9.10	Opening Exercises.
9.10 to 9.25	Reading, Number, Seat Work.
9.25 to 9.40	Kindergarten Work.
9.40 to 9.55	Number, Reading, Writing.
9.55 to 11	Practice Work.
11 to 11.10	Singing.
11.10 to 11.25	{ Writing (1 and 2.)
	{ Drawing (8.)
11.25 to 11.30	Clean Slates.
11.30 to 11.45	Language.

CHEMUNGO Co.—The next session of the Teachers' Institute will be held in Oxford during the week beginning June 2, 1884, with Dr. John French and Prof. Eugene Bouton, instructors. The Commissioners say: "On Tuesday morning the roll of Teachers for the entire county will be called, and we hope to hear a response from every one."

IOWA.—Supt. D. Miller issues the following questions to his teachers: Do you approve of a graded course of study for the Normal Institute? Will you promise to attend such a Normal Institute three weeks of this year? Do you wish me to employ an instructor in the rudiments of vocal music for the Normal Institute? An

instructor in penmanship? An instructor in drawing? Have you any other suggestions to make?

GRADUATING ESSAYS.—A good example was set by the schools of Worcester, Mass., at their closing exercises last year. The essays and orations were not prepared specially for the occasion; they were selected from regular class work during the previous two years. This secured the careful preparation of every essay for the two years as it might be selected as a graduating piece. Then, at the close of school, when the reviews take place, pupils were not oppressed with the preparation of a great essay for a great occasion, and the essays were the genuine work of the pupils.

MAINE.—Supt. J. R. Farrington, of the State Reform School at Cape Elizabeth, in his thirteenth annual report gives some interesting facts about the school. The school-farm has 42 acres under cultivation, the total products of which for the year amount to \$7,485.61. Most of the work is performed by the boys. This labor is granted as a privilege or as a reward for good conduct and proves a strong inducement to good behavior, as they enjoy the outdoor employment. Many are employed about the building, in the kitchen, dining-room, dairy, sewing-room, laundry, and dormitories. All these offices are preferred by the boys to work in the chair-shops, where the unruly ones and those not needed in other departments are kept employed. A mechanical school has recently been added to the institution, furnished with carpenter's tools. An effort is being made to obtain a building into which the best boys may be placed upon a family plan. Statistics and letters from those discharged show that the employments and training received is of great value in teaching habits of industry, self-reliance, and obedience to law.

MEXICO.—New municipal schools have been established in the metropolis. A vigorous warfare is being made upon ignorance, but there are 30,000 vagrant, uneducated children in the capital. The school system is being pushed at both ends. Infant schools are established for the care of very young children, and \$2,000 is devoted to buying toys for making the school-rooms attractive. A thorough normal school has been established for training teachers in natural methods of instruction, and it might be a surprise to many a self-sufficient New England town to learn that instruction by scientific methods is better appreciated in barbarous Mexico than in the home of American education. There is in the capital a school of arts and trades for women, and a similar one for men. In the latter are 170 boys who are taught carpentry, cabinet-making, pottery, brass and iron work, galvanism, printing, photography, etc., as well as the usual literary studies. The tuition is not only free, but there are fifty scholarships, with an allowance of \$30 per month, for which boys throughout the Republic can compete.

NEB.—The Indian school at Genoa is now in successful operation. The management of the institution is intended, like the Indian school at Carlisle, Pa., to instruct its pupils in the industries most available on the frontier, and at the same time to furnish a good common-school and academic education.

A new Normal and Business College is to be erected at Fremont. The plans for lighting, heating, and ventilation are thoroughly scientific and complete. There are no unnecessary corridors or other vacant spaces; all vestibules and staircases are carried up in projections upon the outside. On the first floor there will be a kindergarten and model school for practice work of normal students; on the second floor, the principal's office and family rooms, a fine reception-room, and the auditorium, divisible by movable partitions—arranged on the plan of the Brooklyn City High School—into three large recitation rooms. The third story is divided into the business college, comprising three large rooms—a laboratory, art studio, library, and music rooms. Students are to room in separate buildings, the largest of which will contain not more than fourteen rooms, to be managed on the home plan. The college building is to be ready for occupancy in August, and the normal school, business college, conservatory of music, and art school are to be open early in September.

PATERSON, N. J.—An Industrial exhibition of the Paterson High School last week was a great success. During the year much has been done to induce pupils of all the grades to engage in manual occupation at home and in school. Little children have been taught slat interlacing, paper-folding, mat-weaving, sewing, etc.; pupils of the higher classes needle-work, cookery, carpentry, modeling, moulding, etc. All this has been done under the advice and direction of the teachers, but chiefly outside of school hours. The results were collected in Washington Hall and opened to the public, from Friday to Monday evenings. An admission fee of ten cents was charged, and thousands of people attended. Among articles worthy of mention were some beautiful specimens of needle-work and embroidery, plain sewing, knitting, toy boats, houses, carts, sleds, bird houses, ladders, and other useful articles of work, two steam engines in operation made by recent graduates, and some very fine water-colors and oil paintings on canvas, porcelain and silk. Lunch was served by young ladies who cooked the food and could recommend it. Aside from the industrial work, there was a very good collection of school-work in drawing, writing, and other exercises, also maps of putty showing land elevations and depressions. Most of the articles were sold, and the proceeds, amounting to about \$600, will be expended for the school and class libraries. Prof. Reinhardt is deserving of great praise for the manner in which he has worked up this department, and deserves this success. School No. 4 will follow with a similar exhibition in June.

FOREIGN.

PRUSSIA.—The public schools are divided into primary, burgher, *realschule*, gymnasium, and university. Besides these, there are normal schools or teachers' seminaries. In the primary schools children enter at six years of age, and remain till their education is completed. Education is compulsory between the ages of seven and fourteen. The gymnasium is the preparatory school for the university.

CHINA.—Instruction begins in the family. The boys are taught to enumerate objects, to count to the number of 1,000, and to reverence their parents and ancestors, by a minute ceremonial. At the age of five or six they are sent to school; the age of retiring from school is not specified. The education of girls is neglected, but the daughters of the wealthy are taught to read, write, sing, and sometimes make verses.

ICELAND.—Some prominent Icelanders have established a review school at Reykjavik. Commencing on the 1st of October, the school will be kept up through the winter months. As a result of the industrial exhibition held last summer at Reykjavik a committee of ladies—several English among them—arranged for an industrial exhibit in England this coming summer which is expected to be of great benefit to the Icelanders, as a means of bringing their wares before the people of other nations, and a ready market may be found in England for many of the objects produced by their skilled manual training.

GERMANY.—There are a number of societies for the instruction and general supervision of children of the poorer classes, institutions where children are cared for between the hours of school and home, and where children from the factories are gathered together. Instructors are on hand, and in many cases food is given.—Dr. Steffan, of Frankfurt-on-the-Main, thinks certain phases of kindergarten work are injurious to the eyesight, especially card-board work, drawing figures, braiding, etc. As the little ones cannot hold this work far from their eyes, the result is naturally to produce near-sightedness. In Germany this work is given to children 2, 3, 4, and 5 years of age.

JAPAN.—A writer from Otzu says that the finest building there, as in many neighboring places, is the school-house. The building is lighted from one side, and ventilated in all quarters. The pupils sit at desks of the proper height—two at each desk. The program of studies in the common-schools embraced the three "R's," history, geography, natural science, and, quite lately, gymnastic exercises. Singing is also a part of the course. A six years' course is obligatory. In the next grade of school German and English are taught. The University at Tokio, and the medical school at Kyoto, which has a hospital connected with it, both furnish the highest grade of instruction. Many of the professors at the university are German, and some of the chairs are filled by other foreigners. The medical school was started by a German, but is now carried on by the Japanese themselves.

ENGLAND.—The committee of the Board School Children's Free-Dinner Fund, London, say that the movement for providing free dinners for the poorer children in the board schools originated early in 1882, from a sad revelation that was made to a few earnest friends of the poor, of the deplorably insufficient supply of food on which many of these children were doing their school-work. The public by degrees supported the charitable effort thus made. A marked improvement in the look of some of the children takes place after a brief attendance. It was Victor Hugo's experience that a good dinner partaken of only once a fortnight was sufficient to strengthen destitute children's constitutions against the inroads of disease; and experience in this matter goes to prove that a substantial meal given but two or three times in the week is enough to work a marvelous change for the better in many an enfeebled constitution.

LETTERS.

The Editor will reply to letters and questions that will be of general interest, but the following rules must be observed:

1. Write on one side of the paper.
2. Put matter relative to subscription on one piece of paper and that to go into this department on another.
3. Be pointed, clear and brief.
4. Mathematical puzzles are not desirable.
5. Enclose stamp if an answer by mail is expected. Questions worth asking are worth putting in a letter; do not send them on postal cards.

Can you tell me how clay is prepared for moulding in geography work? I thought I would try moulding this spring in my geography class. I show them pictures in the different magazines, and try to have them show how the places look. They were very interested in Venice to-day, and we had a very pleasant talk about that peculiar city.

My most interesting class is one in U. S. History. They enjoy it so much and have so many questions to ask on the causes of certain actions and the characters of the principal actors. Here, in the woods, there are no public libraries, and we have to do the best we can with our own books to give them a taste for good reading.

C. M. M.
[You are doing well. Sand is good for moulding, better than clay. Any clear sand will do, but sand got at an iron-foundry is best. Clay will soon harden, yet it may be kept wet. Miss Anna Johnson says: If the moulding clay is not very hard it may be rolled up in a wet cloth, and allowed to remain one or two days; if very hard, it may be immersed in water until it is thoroughly moist; it is best to keep it wrapped up, as it becomes very mussy if the particles become separated in the water. When once it is ready for moulding, it may easily be kept in order by keeping it rolled up in a wet cloth. Never use oil with it.—Ed.]

1. How does a fly walk on a pane of glass?
 2. Which is the heavier, a pint of air or a pint of water?
 3. How does a toad, or frog, catch a fly?
 4. Will you name the nine largest cities in the U. S., in the order of their size?
 5. I am studying over the matter of attending Parker's "Institute" this summer. I also desire to gain a State certificate and wish to go to State Normal at Cedar Falls. Which would you advise doing this year—attend Parker's or State Normal?
 C. E. L.
 (1) By capillary adhesion, caused by molecular action between the solid substance and an oily liquid which exudes from the bulbs at the extremity of the minute hairs with which the under part of the foot of the fly is covered. (2) A pint of water. Air always rises to the top of water. (3) The toad sits perfectly still until the fly comes in reach of its tongue, which then darts out with the rapidity of lightning and seizes the fly. (4) See Geographies. (5) Would advise Parker's Summer Institute.—Ed.]

I like my JOURNAL exceedingly; I take it to school and lend it to the pupils to read, and I use "Golden Thoughts" and "Queries" in school. I have two microscopes in school-room. The scholars bring choice specimens for it, which we keep in a small box. After recess on Fridays I allow 30 to 45 minutes to look at these, and also loan microscopes to them at noon or recess if requested. I saw the plan suggested in the JOURNAL. We have "queer queries" also, and like it.

I have copies of *Inwa State Register*, *Youth's Companion*, *Y. M. C. A. Watchman*, and *SCHOOL JOURNAL* on desk in school-room, fresh each week, and several of pupils read quite regularly.

I am trying to grow into a true teacher. I have dictionary, *People's Encyclopedia*, *Page's T. P.*, *Kellogg's "School Management"*, and want more; Parker's "Talks on Teaching" especially.
 C. E. L.

Allow me to suggest that we need a *Mental Philosophy*, written in plain English, that is, freed from the technical language usually employed. Our educational writers are urging us to follow the laws of mind. This is well, but have we to-day a book on this subject suited to the average common school teacher. Bain, Carpenter and such writers, it seems to me are too heavy for our young teachers. Alden's comes the nearest to what we want; but that is not what is needed. The book should be the size of your "School Management." I know of no one better fitted to prepare it than Col. Parker. "Normal Methods of Teaching," by Brooks, contains a tolerably good statement of the subject, but his book is too heavy.
 J. B.

[There is a need of just such a volume.—Ed.]

(1) Why are the counties of Delaware subdivided into Hundreds, instead of townships, and where did the term originate. (2) What is the cause of quicksand forming in roads in summer?

(1) The term originated in England. A separate division of each shire or county into "hundred families" was made and a court established in each division. This term was applied to the townships of Delaware during the colonial period, and has since been retained. (2) Quicksand differs from other sand in this, that its particles are round, or roundish; hence they are unstable. A kind of soft, slippery black clay is often found mixed with sand, and is called quicksand.—Ed.]

In your issue of 13th inst. you say: "It has occurred to me to ask if a series of plain articles on Psychology would be relished?" I should say, "Yes, decidedly." There are hundreds and thousands of teachers who have caught the spirit of the New Education, and who are just awaking to the fact that there are such things as principles to guide them in teaching, but who do not know what these principles are. Please let us have the articles.

With regard to teachers going to South America, is there a real demand for English-speaking teachers? and are salaries sufficiently high to be an inducement to leave fair positions in this country.

[See elsewhere for answers to both questions.—Ed.]

(1) What course would you pursue toward "roughs" who spoke insultingly to you on the street. Would it be advisable to arrest them? (2) How soon will "Quincy Methods" be out?

(1) The usual course would be not to notice them; but it may be necessary to do otherwise. A lady who was much annoyed took this course. She had a small boy walk with her, and he gave her the names of the "roughs" who spoke to her. She then went to their houses and complained to their parents. The trouble ceased in all but one case; and she took a justice of the peace with her and made another call. This resolute conduct ended her trials. (2) June 1.—Ed.]

(1) Which are the five largest canals in the world? (2) Who is the present Governor-General of Canada? (3) Where is the best summer Institute for general information and culture?

(1) The great canal of China, 500 miles long; Wabash and Erie, 374; the Erie, 363; the Ohio, 333; the Miami and Erie, 291. (2) See columns of JOURNAL, April 19. (3) It depends on what you want to study. Prof. Straight, at Martha's Vineyard, or Col. Parker, at Normal Park, will both hold sessions that will be of immense service. Write to both at Normal Park, Ill.—Ed.]

I have taken your valuable paper for about nine months, and do not think I shall ever do without it. I find it has been a source of profit to me mentally, as well as aiding me in making a better, truer teacher of myself, and enabling me to get better wages than

ever before. I join in asking that our INSTITUTE be printed in magazine form, for binding, and hope you will so decide to do.

Question? Where can I get a copy of Perkin's Practical Arithmetic, and at what price?
 T. W.

[D. Appleton & Co. are the publishers; if out of print address the second-hand whose cards may be found in our columns.—Ed.]

(1) Is it right to pronounce *Arkansas Arkansas*? (2) Is *in* ever the leader of an adjective phrase? (3) Is *like* ever a preposition?

(1) Yes. (2) It may be. Remember an adjective phrase is one that modifies a noun—"Water in vapor" is called steam. (3) Usually an adjective, "Like passions." May be a noun, "I shall not look upon his like again." May be an adverb, "Was not arrayed like one of these." It may be a verb, "I like sugar." Not a preposition.

"Light seeking light
 Doth light of light beguile."

(1) Please give the meaning of the above lines, and (2) state the author and work from which they are taken.

N. C. B.
 [(1) Light (the intellect) seeking light (truth) doth beguile (impose upon or defraud) light (the eyes) of light (light, the opposite of darkness). (2) Shakespeare in "Love's Labor Lost." Act i. Scene 1.—Ed.]

(1) How would you read the decimal $\frac{1}{2}$? (2) In the issue of April 24th, '84, there appeared the sentence, "The man whom they intend shall do that work," among the incorrect forms. Please state what word you would supply for "whom," and why?

F. E. E.
 [(1) Seven-eighths of one-tenth. (2) This is probably a misprint; "whom" is correct—it is the object of "intend."—Ed.]

Please recommend to me some good work on politeness; one that tells what to do as well as what to avoid; one such as is mentioned in the dialogue, named "The S. P. R.," in the JOURNAL of April 26th, and give the price.

N. W.
 ["People's Etiquette," J. S. Ogilvie & Co., N. Y., 25 cents (paper), or "Social Etiquette," John W. Lovell & Co., N. Y., 50 cts.—Ed.]

(1) Have you read Crandal's "Three Hours' School a Day"? If so, what is your opinion of it? He mentions Dod's Psychology and Combes' Phrenology and Physiology, and Dod's publications on Electricity. (2) Are these the best publications of the kind? If not, where can I get them?

W. D. T.
 I receive your JOURNAL every week, and think it is the cheapest and best journal published. I have taken a great many others, but none so good as yours. I can teach a much better school with it than without it. I do think it ought to be in the hands of every one who desires to keep up with the ways of the world.

M. R. B.

Which of the following statements is correct? Ten times 1 is 10, or 10 times 1 are 10, and why?

C. F. W.
 [The latter because we mean "ten ones are ten." Ten taken one time is ten; one taken ten times are ten.—Ed.]

You are supplying the teachers with tip-top materials, tools, advice and instructions; you have a most excellent corps of contributors.

T. P. HEENAN, Comr. for Albany Co.

What is the best book of outlines of map-drawing for schools?

J. G. W.
 [There are several. D. Appleton & Co., A. S. Barnes & Co., or University Pub. Co., Ivison, Blakeman, Taylor & Co., all publish good ones.—Ed.]

Have been a constant reader of the JOURNAL since last October, and think it has no equal. Would not part with it for three times its cost.

Your publications are gaining ground among the "real men." The clubs obtained last summer are well pleased with their papers.

W. E. T.

My sister and myself read the INSTITUTE and TREASURE TROVE. We think our schools are much benefited by them. We could not do without the INSTITUTE.

E. P.
 Every teacher that pretends to live with the living ought to subscribe for the INSTITUTE.

E. E. T.

Send you a subscription as the result of your sending a sample copy. Your paper speaks for itself.

C. B. S.
 Give us the "series of plain articles on Psychology" as quick as you can.

E. D. BRINKERHOFF.

"THE Correspondence University" is a new enterprise in education. Forty-two teachers in various colleges are prepared to give instruction by correspondence in Agriculture, Physics, Modern Languages, Classics, Hebrew, Philosophy, History and Political Science. The fee for four weeks' tuition in the advanced studies is eight dollars and thirty-five cents payable in advance; for the lower grades six dollars and thirty-five cents. There are many unable to bear the expense of a 'course' in college or a university who could accomplish much with a little assistance from the right person. This enterprise will perhaps be such an opportunity.

EDUCATIONAL MISCELLANY.

SLOVENLY READING.

The *Journal of Progress* warns all men, old and young, against an evil thing which has been described as the "prevailing pestilence of slovenly reading." This pestilence has laid low many a one who began life with excellent prospects. It is ruinous both to mind and morals. It is apt even to injure a man's business habits and prevent him from winning success in practical affairs. In time it will confound all his faculties; it will destroy his capacity for clear perception, for precise thought, and for proper reasoning. It will throw into confusion his judgment and his memory. If he does not get rid of it he can never become a good writer, or do any literary work of any kind worth looking at. How many slovenly readers are to be found in these times! They will, in their slovenly fashion, read a newspaper article, perhaps a very excellent one, and when they have got to the end of it, or, as they say, when they "have looked through it" or "glanced over it," you will find that they are unable to give an accurate account of its argument or that they do not apprehend its fundamental points, or that they have lost one of its links, or that they have overlooked an important illustration, or that they have failed to seize a word which is the very hinge of the writer's thought, or that they have wholly misunderstood the drift and purpose of the article which they have wasted their time in "glancing over." These slovenly readers are an affliction to careful and correct writers. When such a writer sees how his reasoning, his language, are distorted by them, his mind is apt to become ruffled, and every one knows how a ruffled mind unfits a man for work of perspicacious composition. We are of the opinion that the prevailing pestilence of slovenly reading is largely due to the slovenly way in which children are taught to read at school. Teachers must be very careful about this thing; they must teach their scholars to read with precision and understanding, thinking of every word, getting the sense of each sentence, and grasping the full meaning of any piece that may be before them.

WHO—WHICH—THAT.

These words properly cause trouble even to skillful writers of the English language. Mr. Alfred Ayres, author of the "Orthoepist" (published by D. Appleton & Co.), says:

As long as we continue to use the relative pronouns indiscriminately, so far as co-ordination and restriction are concerned, the meaning of all but one of the following sentences—which are all grammatically and idiomatically correct—and of all like sentences, will be doubtful:

1. These are the master's rules who must be obeyed.
2. These are the rules of the master who must be obeyed.
3. These are the rules of the master that must be obeyed.
4. These are the rules of the master which must be obeyed.
5. These are the master's rules which must be obeyed.
6. These are the master's rules that must be obeyed.

Nos. 1 and 2 should mean: These are rules of the master, and he must be obeyed; but they may mean: These are the rules of a certain one of several masters, and this one is the one we must obey.

No. 3 may mean: Of the master's rules these are the ones that must be obeyed. It may also mean: Of several masters these are the rules of the one whose rules must be obeyed.

Nos. 4 and 5 may mean: These are the rules of the master, and they must be obeyed; or they may mean: Of the rules of the master, these are the ones that must be obeyed.

[In No. 6 "that" is used restrictively, that is, the obedience is tied fast to "rules."—Ed.]

"And fools who came to scoff remained to pray."
—GOLDSMITH.
The man that [not who] can tell this line means, does not live.

"Agents of the Turkish Government are trying to close the Protestant schools in Asia Minor, which are conducted by missionaries from the United States." Are the Turks trying to close all the Protestant schools in Asia Minor, or only a part of them?

"The police captains who yesterday visited the Central Office to draw their pay, all expressed their sympathy," etc.—*New York Sun*.

Did all the police captains visit the Central Office, or only a part of them?

[In this case, if it had said "The police captains *that*," etc., it would have said that only a part "visited," etc., and that was probably meant.—Ed.]

Dr. William A. Hammond says: "I am faithfully trying to adopt your ideas. Of course, old tricks are difficult to get rid of, and new ones are difficult to learn, but I am succeeding as well as could be expected. Occasionally I still have to scratch out a WHO or a WHICH, and insert a THAT, but the instances are becoming fewer every day, and ere long I shall use my THATS as automatically as I formerly used my WHOS and WHICHES. I resisted for a while the substitution of THAT for WHO, but even this change is being surely effected—and with, I think, decided advantage to my literary style."

In May *Harper's*, Dr. Moritz Busch transcribes a written statement of the principles made by King William when a young man:

"I take pleasure in my high station, not on account of the distinction which it gives me among men, but because in it I can work the better and accomplish the more. My rank ought always to remind me of the great duties which it imposes upon me, the great exertions which it requires of me, and the great temptations against which I have to battle. I will never forget that a prince is also a man, and before God only a man, sharing with the meanest of his people the weakness and the wants of human nature; that the laws which control others are written likewise for him; and that he, like others, will one day be judged according to his conduct. I know what I owe, as a man and a prince, to my honor. Never will I seek it in things where only madness can find it. My powers belong to the world, to my country. I will therefore be unweariedly active in the sphere assigned to me, employ my time in the best manner, and accomplish as much good as lies in my power. I will maintain an honest and hearty goodwill toward all men, even the humblest, for they are all my brothers. I will use my dignity as a prince to the disadvantage of nobody, oppress nobody by my own superior facilities; and when I have demands to make of any one I will be gracious and friendly, in order to render the execution of the demands as easy as possible. I esteem it much more highly to be loved than to be feared, or merely to enjoy the consideration of a prince. Flatterers I will firmly repel. The best, the most open, the most sincere shall be the most welcome to me. I will hold those to be my best friends who tell me the truth, even when it may seem likely to displease me."

Dr. Busch adds: "These principles were not simply written down; they have been realized in life. They adorned the Prince, and became the daily guide of the King; they made him great; they won and preserved for him the love of his people. In obedience to them he has always taken his mission strictly and earnestly, first as soldier, then as ruler."

THE PANAMA CANAL.—Work on the Panama Canal is being prosecuted vigorously. About \$40,000,000 has thus far been expended, about 15,000 men being employed, mostly negroes from Jamaica and the French West Indies. M. De Lesseps expected to complete the canal by the year 1888, but that is thought to be too early a date, even if a practicable canal can be made at all between the two oceans. About 800,000 cubic yards of excavation is done per month. The climate is very unhealthy; as many as five thousand have died within three months; but the large pay tempts men to brave all danger. The company appears to have an unlimited supply of money and pays off every two weeks. In the four years since the work

begun two miles and a half of the canal proper has been dug out. Originally this section was dredged to a depth of fourteen feet, but is now only six feet deep, the soft swamp lands pressed down by the weight of the dirt thrown out on either side, filling in the canal from underneath. A great deal of work has, however, been done with the great steam shovels in levelling the high lands through which the canal is to pass, and dredging will soon be started in those sections. Work is now progressing upon the only large mountain which bars the way of the canal from ocean to ocean. This mountain is four hundred feet high, and nine miles in circumference, and is to be cut down with steam plows and carted away. The company has been compelled to spend \$30,000,000 to locate homes through the swamps, from which as a basis the work of digging out the canal can be carried on. This work necessitated the building of railroad branches into the swamps, and the making of solid foundations with stone and gravel, hundreds of feet wide and miles in extent. Laborers get \$3 a day, and skilled mechanics and bosses from \$100 to \$350 a month. The total length of the canal is seventy-four kilometers. It is divided into twelve sections, which employ daily thirty steam excavators, forty locomotives and 800 dip wagons. There are 90,000,000 cubic meters to be excavated. The excavation up to the 15th of October amounted to more than 2,500,000 cubic meters. Next year mostly all the necessary machinery will be at work, and the excavations will amount to 4,000,000 meters per month. At Colon the port works are nearly complete. The terreplein, with the breakwater, destined to lessen the effect of the heavy seas at the entrance to the canal, is finished. An entire town has appeared there, with a collection of workshops, warehouses and connecting railways for the reception and distribution of the material. The earth of the terreplein was taken from Monkey Hill, where a great cutting has been specially opened with the object of filling up the lagoons at the bottom of the Bay of Colon to improve the sanitary condition. The first of the 120-horse power machines between Colon and Gatun, a distance of nine kilometers, is in full blast, and is able to excavate the enormous quantity of 6,000 meters per diem, to be paid at the rate of 1 franc per 50 cubic meters.

BACON said: "Some books are to be tasted, others to be swallowed, and some few to be chewed and digested; that is, some books are to be read only in parts; others to be read, but not curiously; and some few to be read wholly, and with diligence and attention." "The *Advocate* says: 'Some men's memories are so retentive as to be an inconvenience to them. If they read something bad or trashy it haunts them for weeks. Bayard Taylor often complained of the tenacity with which his memory held on to the most absurd things. But then Taylor read everything that came in his way, and thus degraded his memory to the uses of a packhorse. Bryant, also, had a marvelous memory, but he never abused it. Knowing that it never forgot anything, he was fastidious about his reading, and never browsed among unclean or worthless books. His memory, therefore, instead of annoying, soothed and exhilarated him. When at sea, he was always too sick to read much. But such was his familiarity with the English poets that he would beguile the time by reciting page after page from favorite poems. However long the voyage, he never exhausted the resources of his memory. 'If allowed a little time,' he once said, in his later years, 'I could recall every line of poetry I have ever written.' Young persons gifted with a retentive memory should imitate, in their reading, the fastidiousness of Bryant rather than the voraciousness of Taylor. Now and then a young man or a young woman, when tempted to read a bad book, says to himself: 'O! I'll only look it through; it won't hurt me.' But it will. And the stronger the memory the greater and more lasting will be the injury. The evil which a bad book does lives long after its title has been forgotten. It raises bad thoughts and images, which will not down when we bid them."

NEW YORK SALT BEDS.—It is estimated that the salt fields of western New York will this year produce 900,000 barrels of the best salt. A few years since a well was sunk at the little village of Wyoming, on the Rochester and Pittsburgh Railroad, forty miles southwest of Rochester. The diggers were looking for petroleum, but found instead a deposit of rock salt. Wells were shortly after put down in various places within a radius of 100 miles, and the results have been wonderful. The most prominent place in this territory, perhaps, is Warsaw, Wyoming county, where there are eight wells. Solid salt is found at a distance from the surface of from 1,000 to 1,800 feet. The beds are 90 feet thick. The industry has imparted great activity to the village, and many workmen are employed. Six miles north of Warsaw, in Wyoming village, there are two wells, only one of which is in operation. The salt is about 60 feet in thickness, and is reached at a depth of more than 1,500 feet. About 80 barrels daily are produced. At Castile, in the same county, there is a valuable well, with salt 2,600 feet from the surface. New York capitalists have its development in charge, and arrangements are in progress for works. Perry, also in the same county, has just organized a stock company, and a well will go down shortly. Livingston county also has a number of good wells. In Genesee county the only salt territory so far developed is Le Roy, where there are three good brine-producing wells. It is found at a depth of only 610 feet.

In one of his Monday lectures in Tremont Temple Joseph Cook said: "Romish priests, when they have had their own way, never yet gave in their parochial primary-school instruction enough to fit a population for the duties and responsibilities of a free government. It is unsafe to allow the Pope to govern primary schools in a free nation. The formation of State sectarian schools would convert the appliances of education into the means of proselyting, intensify religious clannishness, give all education a sectarian bias from the first, destroy the efficiency of the school system, and include many of the historic evils of the connection of Church and State. A priesthood which wishes to do in the United States what it has done in Spain, Mexico and Italy, is an enemy of the social and industrial interests of the Roman Catholic American masses. Without better education than parochial schools have given in Romish countries, the semi-illiterate Catholic population, when brought into competition with the educated masses of the American people, drop into inferior positions, are obliged to act as hewers of wood and drawers of water, and become low-paid, pinched subordinates in the ranks of labor. Monsignor Capel is an able, devout and eloquent ecclesiastic. That a prelate of his ability and tact should assail the common-school system of the United States is a suggestive sign of the times. He is, no doubt, sincere in demanding religious instruction for the young. American common school exercises, like the German and the best of the English, can be made to include in the future, as they generally have done in the past, a certain amount of entirely unsectarian religious instruction, and so take all force from the Catholic cry that the common schools are irreligious and godless. Intelligent American populations will defend their common-school system as the safeguard of the Republic, and cannot rationally be expected to consent to a division of the school fund among sectarian organizations."

THE SANDWICH ISLANDS.—A trip to the Sandwich Islands is rapidly becoming fashionable in California. People may almost as well confess their inability to understand the French language as to say that they have not been or are not going to Honolulu this year. Several large parties have already made the trip, and more are being made up every day for taking it. Europe, for the present, appears to have been given the cold shoulder.

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Dr. J. C. Wilson, Philadelphia, Pa., says: "I have used it as a general tonic, and in particular in the debility and dyspepsia of overworked men, with satisfactory results."

BOOK DEPARTMENT.

NEW BOOKS.

HYGIENIC PHYSIOLOGY. Joel Dorman Steele, Ph.D. New York: A. S. Barnes & Co.

Using an astronomical form of expression, we are inclined to think that this is the brightest star in the constellation of text-books by Dr. J. Dorman Steele, although the others are stars of no inferior magnitude. The work is designed for the instruction of the young in the principles which conduce to the preservation of health. Scientific terms are used simply to give clearness to the thought, and to furnish the learner with a suitable nomenclature. Appended to the description of each organ is an account of the functions most liable to derangement, and the mode of treatment necessary to restore those organs to a normal condition. The introduction of each subject by an analytical diagram is an excellent feature of the book. It aids the teacher to give the pupils an outline of what they are about to study, to explain points liable to be misunderstood, and to awaken a deeper interest in the subject. The directions for preparing microscopic illustrations of the different organs, which are given at the close of the treatment of the subject, is another excellent feature, although in some cases the suggestions in regard to the sources of such illustrations might be improved. The author's advice on muscular exercise is to the point. The young men of America need some wholesome counsel on that subject. The tendency of the age is to extremes. The important subject of bathing, both in regard to time and method, is wisely and admirably treated. The no-less important sanitary subject of bodily protection is equally well presented. Breathing and ventilation receive the attention their importance demands. The great trunk line of circulation through which nourishment is conveyed to every part of the body, and much of the waste matter of the body is removed, is well discussed. The curves and branch lines are clearly pointed out and defined, and the perfection of the valve-like "brakes," and movements so perfect as never to require a reversion of the engine, is made clear and evident to the comprehension of ordinary intelligence. In this connection the author very justly points out the baleful effects of alcoholic drinks and narcotics, showing their influence upon the heart, the membranes, the blood, and the lungs, and their destructive power over human life and human happiness. The subject of digestion, including the need of food, the effects of food, and the kinds of food, receives the consideration its importance demands. The injurious effects of alcohol upon digestion and upon the organs of digestion are clearly and well defined. The work is practical, and while its arrangement and plan adapt it to the school and the class-room, it will be no less valuable to the general reader.

THE WOMAN QUESTION IN EUROPE. Edited by Theodore Stanton, M.A. New York: G. P. Putnam's Sons. \$3.50.

This is a collection of original essays by European women of literary training and that have, many of them, participated in some phase of that remarkable social revolution now going on both in Europe and America—the woman's movement. With two slight exceptions all the contributions are from the pens of women, and they are women competent to speak. The editor's aim has been to make this volume a storehouse of facts rather than a philosophical study, but such a study might well be based upon the material found in these pages, for it is abundant, accurate, and of overwhelming force with the thinking world. An able introduction by Miss Frances Power Cobbe, generalizes the question of woman's position, and the leading principles in the struggle for recognition and equality. The other contributors are representative each of a different country, and show as only native writers can the real situation as regards the woman question in the countries reviewed, giving much statistical information, an outline of the progress of legislation on the subject and, what is of more vital interest, the essential moral standing of womankind at the present time. Seventeen European countries are represented, including the Orient. Each chapter is preceded by a short biographical sketch of the author. The text is accompanied by many notes chiefly by the editor, whose labor and care in the work have been exceedingly arduous; the result, however, is amply satisfactory. Here is not the place for a discussion of the questions treated in this book, or for pronouncing on the merits of the arguments advanced, but of the great value of the work as a reliable summary of the facts, and an intelligent commentary

on the situation there can be no doubt. It is undeniably a work of great value and consequence to the thinkers of to-day.

SCHOOLS AND STUDIES. B. A. Hinsdale, A.M. Boston: James R. Osgood & Co.

Those who have read "President Garfield and Education," by Mr. Hinsdale, will open this volume with high anticipations. Although this remark may seem a little prophetic, we feel quite confident that a careful perusal will not disappoint those anticipations. The author's easy, flowing style, connected with the fact that there is thought in it, renders it a readable book as well as valuable. It is a 16mo. volume devoted to the growth and improvement of educational methods and educational instruments; to the discussion of fundamental educational doctrines, the choice and value of studies, criticisms upon methods, schools, and courses of study, the relation of the public to the public schools, reforms in schools, and to industrial education. The chapter on the origin of character is of itself worth more, to every man or woman engaged in the profession of teaching, than the whole volume cost. From the chapter on managing children every teacher and every parent may pluck blossoms to beautify his own mental edifice, and dig plants to reset in his own intellectual gardens. "Means and Ends" are well discussed, and the "Plea for Breadth" will bear repeated study and careful consideration. The entire volume is a work of well digested thought, and worthy to be placed in any teacher's library, every family library, and every public library of our rapidly growing country.

THE POST-NICENE LATIN FATHERS. George A. Jackson. Edited by Prof. George P. Fisher, D.D. New York: D. Appleton & Co.

This is the last number of the "Early Christian Literature Primers," published by Messrs. Appleton & Co., and consists of brief biographical sketches and descriptions of the writings of Hilary, the "Athanasius of the West"; of Ambrose, "the knightly bishop"; of Jerome, "the author of the Vulgate"; of Rufinus, "the Latin translator"; of Augustine, who is said to be a figure in the ecclesiastical world too great to need a title; of Pelagius, the British monk; Julianus, the deposed Pelagian bishop; Cassian, the semi-Pelagian; Vincent, the champion of the Catholic faith; Salvian, the Jeremiah of the fall of the Western Empire; of Leo the Great; of Fulgentius, the foremost theologian of his day; of other writers after Leo; the Latin Church historians; and the Latin Christian poets.

In this, as in the other numbers of the series, the author has furnished the reading public a vast amount of information at a trifling expense, and a great saving of time.

CHASE AND STUART'S LATIN GRAMMAR. Thos. Chase, LL.D. Philadelphia: Eldredge & Bro. \$1.35.

Chase and Stuart's Latin Grammar is one that possesses many merits; its special feature is its adaptation to the wants of the student in acquiring a knowledge of the Latin language. We are pretty well acquainted with Latin Grammars, having handled them with students for twenty-five years, and deem Chase's work a superior one. There are larger and fuller grammars, but none that in the space this occupies say better what should be said. There is not much chance for novelty in making a Latin grammar; the arrangement is what is really valuable—the arrangement of matter the student must examine and learn. The selection and arrangement of definitions and facts, of declensions and conjugations, of rules and directions, are as good as has yet been devised, and as the authors are men of skill as teachers, we heartily commend their judicious work to the public.

WENTWORTH AND HILL'S EXAMINATION MANUALS. No. 1.—ARITHMETIC. Boston: Ginn, Heath & Co. 40 cts.

The Manual consists of a series of examination papers to be used as tests of a pupil's knowledge, reviews of the subject matter of Arithmetic, and as aids to teachers in preparing questions for written examinations.

The Manual is arranged in two parts. The first part contains 150 papers, averaging from five to seven questions each.

The second part is composed of papers used in recent examinations for admission to various American and English colleges and universities. The questions in the first part are, to a certain extent, graded, and are well selected and clearly stated.

The first four pages of this Manual are devoted to a specimen paper worked out. These serve as a guide to pupils on points of form, order, neatness, and arrangement. Papers of the first part are intended to be home papers.

CHAPTERS IN POPULAR NATURAL HISTORY. Sir John Lubbock, Bart. New York: Thomas Whittaker. 60 cts.

This book treats in six sections of ants, bees and wasps, the colors of animals, flowers and insects, plants and insects, fruits and seeds. It has many illustrations, rendered intelligible by its clear, simple style in narration and description. It is exceedingly interesting, and one cannot fail to be pleased on reflecting that so profound a scientist as Lubbock has the faculty of unfolding the secrets of nature in a way so attractive to the general reader. Particularly for the young will this little book prove a treasure, deepening their interest in and love for the world about them.

ARCHIBALD MALMAISON. Julian Hawthorne. New York: Funk & Wagnalls. 15 cents.

This story is sufficiently sensational for the average novel reader, and has a strong and, in some respects, original plot. It is not the author's best work, however, and apparently not his latest. His method of introducing the story is an imitation, and a bad one, of the elder Hawthorne. The story itself is told in the son's peculiar and characteristic style, and in spite of faults is decidedly interesting.

MAGAZINES.

The May number of the *Princeton Review* contains: "Federal Aid to Education," by Henry Randall Waite, who believes it should be devoted to the enlightenment of the negro. In "The Psychical Relation of Man to Animals," Prof. Jos. Le Conte supplements his paper in the November number, by a discussion of the essential differences between the spirit of man and the *anima* of animals. "Land-Owner and Farmer in England," by Daniel B. King; "Mystical Theism," by the late Prof. Phelps; "Shall We Have a Second Federal Convention?" by Alexander Johnston, and "Sheridan and His Biographers," by Brander Matthews, are the other papers of the number. Mr. Johnston believes that the machinery of state needs cleaning and repairing, and that a Federal convention in 1887 would be the agency and time to accomplish it. Mr. Matthews thinks Sheridan a greatly misunderstood man. A critical and exceedingly interesting view of his character is given.

LITERARY NOTES.

"High License, the Monopoly of Abomination," is the title of a sermon delivered by Rev. Dr. T. De Witt Talmage, and just published by the National Temperance Society.

A series of especially valuable articles on educational subjects will begin in the June *Century* with a discussion by President Eliot of Harvard, of "What is a Liberal Education?"

Richard Grant White will soon publish "The Fate of Mansfield Humphreys, including the Episode of Mr. Washington Adams in England"—several papers reprinted from the *Atlantic Monthly*, with an additional chapter.

The "Evangelical Hymnal," by Rev. Charles Cuthbert Hall, pastor of the First Presbyterian Church, Brooklyn, and Mr. Sigismund Lasar, has just been adopted into the choir and chapel exercises at Williams College.

The pamphlet of John W. Burgess, Ph.D., published by Ginn, Heath & Co., "The American University—when Shall it Be? Where Shall it Be? What Shall it Be?" will be of pointed interest to all concerned in the question of higher education in this country.

No. III. of the "Stories by American Authors," published by the Scribners, contains half-a-dozen excellent short stories. They are by Frances Hodgson Burnett, G. P. Lathrop, Celia Thaxter, Brander Matthews, Fitz-James O'Brien, and David D. Lloyd.

The discovery of the Bryennios MS., the long-lost writing referred to by Clement of Alexandria, Eusebius and others as the "Teaching" of the Apostles, is certainly an event in the religious and the literary world—a "find" of decided interest. It has been published in pamphlet form, text and translation, with a few notes by Charles Scribner's Sons. The price is 50 cents.

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CASH ASSETS.....\$7,492,751 11

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